

REMARKS

The present invention relates to a photosensitive polymeric network comprising an amorphous network and a photoreactive component.

In the Office Action dated October 30, 2009, the Examiner indicated rejection of claims 1-7, 9-11, and 21, and objection to claim 8; furthermore, claim 12 - 20 were withdrawn from consideration. More specifically, claims 1 - 8, 9 - 11, and 21 were rejected under 35 U.S.C. § 102(b) or alternatively under 35 U.S.C. § 103(a) over US Patent 6,388,043 (Langer et al). Claim 8 was specifically indicated as being objected to, but allowable if rewritten in independent form. There were no other rejections. The Examiner's recognition of patentable subject matter is appreciated.

In this Amendment, Applicant has amended claim 1, including incorporation of claim 2 therein, canceled claim 2, amended the dependency of claims 3 and 4, amended claims 6 and 8, canceled claims 14 - 17 and 19 - 20, and added new claims 22 - 28.

Support for the amended claims is found throughout the specification, and to facilitate the Examiner's review, the supporting paragraphs are identified below by reference to the corresponding US Patent Application Publication US 2006/0257629 A1. In this regard, claim 1 is supported, e.g., by original claim 2 and paragraphs [0022] and [0029]. Amended claim 8 is supported, e.g., by paragraph [0033]. New claims 22 - 28 are supported, e.g., in paragraphs [0023], [0024], [0026], [0030] and [0041]; furthermore, new claim 26 is supported by original

claim 6. In view of the cancellation of claim of claims 2, 14 - 17, and 19 - 20, it is respectfully submitted that no excess claim fee is due; however, if it is found otherwise, authorization to charge the deposit account number of the undersigned is given below.

Also, with respect to remaining withdrawn claims 12, 13, and 18, the Examiner is respectfully requested to consider the propriety of rejoining said claims upon determination of patentability of other pending claims.

Applicant respectfully submits that the amended claims herein are novel, nonobvious, and patentable over the cited references, and particularly with respect to the Langer et al reference, for the reasons explained below.

Claim 1 herein is directed to a photosensitive polymeric network, comprising an amorphous network and a photoreactive component, the amorphous network comprising a matrix component, which is transparent for ultraviolet light and has elastomeric properties, and a crosslinking component able to undergo a reversible reaction upon stimulation with ultraviolet light.

The polymeric network of the present invention is capable of being deformed without being heated due to its elastomeric properties. When it is irradiated with UV light while being deformed, the photoreactive component undergoes a reversible reaction, forming additional netpoints which fix a temporary shape. The transparency of the matrix towards UV light enables the light to permeate the material and to stimulate the photoreactive component also in deep layers. Thus, an extraordinary good fixation of the temporary shape is achieved. Moreover, the

elastomeric properties of the matrix component allow the deformation of the material in order to program the temporary shape at room temperature. No application of heat is needed.

Langer et al generally disclose shape memory polymers which may be triggered by temperature (heat), changes in the ionic concentration and/or pH, electric or magnetic fields, ultrasound or with light (col. 4, lines 11-24; col. 5, lines 28-30). With respect to the light induced shape memory effect, Langer et al also discloses the application of ultraviolet light (col. 11, lines 54-55).

However, Langer et al fail to disclose that the matrix component is transparent for UV light. As set forth above, the UV transparency in the present claimed invention is an important property of the matrix to enable a good fixation of the temporary shape within the whole material, i.e. the whole article formed from it.

Langer et al also fails to disclose a matrix component that exhibits elastomeric properties.

In fact, Langer et al do not disclose any specific matrix material which is suitable for light sensitive SMPs. On the contrary, the polymer materials described in col. 6, line 31 through col. 9, line 22 virtually cover all SMPs which can be triggered by temperature (as can be seen by the discussion of the glass or melting transition temperatures T_{trans} in col. 6, line 35 to col. 7, line 22). Please also note that the Examples of Langer et al exclusively relate to temperature switched SMPs. No specific example for a light-stimulated SMP is given in Langer et al.

Thus, the disclosure of Langer et al does not provide sufficient information for the skilled person to provide a light-stimulated SMP.

In view of the forgoing, Applicant respectfully submits that the rejections based on Langer et al should now be withdrawn, and the claims allowed forthwith.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby earnestly solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the local Washington, D.C. telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

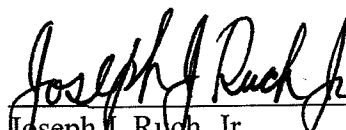
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